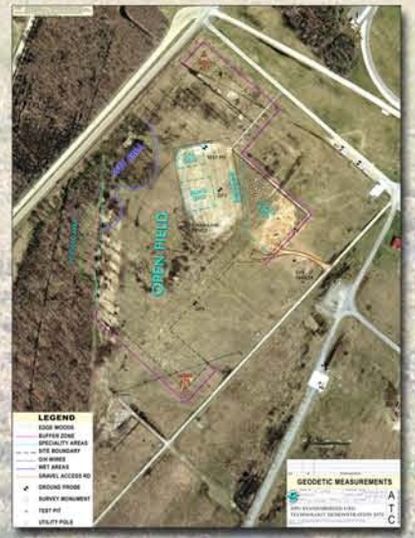
Standardized UXO Technology Demonstration Sites

Objective

To provide the UXO community with standardized demonstration sites (APG & YPG), protocols, objective performance scoring/comparisons in detection and discrimination stages and a target repository for UXO technology testing and performance evaluation.



Site Layout

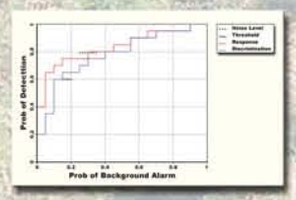
1. Calibration lanes
2. Blind grid
3. Open field
4. Woods/Desert extreme
5. Moguls/Holes

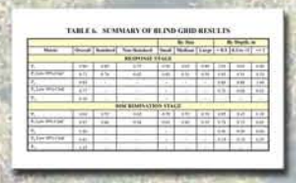
Challenges

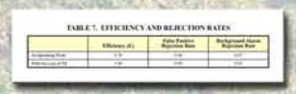
1. Electrical lines
2. Wet area
3. Swales
4. Stone pad/road
5. Steel fence

Programmatic Application Process

- Sixty days before requested demonstration, submit application.
- Thirty days before demonstration, submit demonstration plan, including:
  - Field operations
  - Equipment description
  - QA/QC plan







PERFORMANCE SCORING

Objective

To provide objective scoring of user's system in both the detection and discrimination stages through the use of an automated scoring system.

Scoring Records

- For each scenario (blind grid, open field, woods, moguls)
- Contains seven sections:
  - General information (including scoring methodology)
  - Demonstrator data
  - Field data
  - Technical performance
  - On-site labor costs
  - Comparison of results
  - Appendixes
    - Terms & definitions
    - Field logs

Technical Performance

Performance at Two Stages

- Response
- Discrimination

Scoring Parameters

- Probability of detection (P_d)
- Probability of false positive (P_{fp})
- Background alarm rate (BAR) or probability of background alarm (P_{ba})
- ROC curves
- Efficiency ratio/Rejection ratio
- False positive rejection rate (R_{fp})
- Background alarm rejection rate (R_{ba})
- Cost comparisons

Comparisons

- Field scenarios
- Standard vs. nonstandard targets
- Site-to-site comparisons

STANDARDIZED TARGET REPOSITORY

Objective

To provide the UXO community with standardized targets for UXO technology testing and performance evaluation.

Inventory

- Variety of ordnance size and type:
  - 20mm to 155mm
  - Mortars, projectiles, rockets and submunitions
  - Various nonstandard targets (tail fins, warheads, fuzes, etc.)
- Other targets:
  - 8lb and 12lb steel spheres
  - 30cm and 60cm steel discs
  - 15cm and 30cm copper loops
  - range clutter

Data Repository

- Borrowers required to provide raw data collected from items
- Data sharing

Application Process

- Available only to agencies that have validated need
- Request items through application (available on www.uxotestsites.org or by e-mailing larry.overbay@atc.army.mil)
- Allow lead time of four to six weeks

Contact:

George Robitaille | USAEC
410-436-6865
george.robitaille@aec.apgea.army.mil

Larry Overbay | ATC
410-278-7620
larry.overbay@atc.army.mil

www.uxotestsites.org

SERDP Strategic Environmental Research and Development Program

ESTCP

EQT ARMY Environmental Quality Technology Program